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M E M O R A N D U M

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TO: The Board of Oil, Gas and Mining

FROM: Mary Ann Wright, Reclamation Biologist

SUBJECT: Plateau Resources Ltd.  
Shootering Canyon Uranium Processing Facility  
ACT/017/016  
Garfield County, Utah

DATE: July 10, 1979

The Division of Oil, Gas and Mining has reviewed the Mining and Reclamation Plans submitted by Plateau Resources Ltd. for the Shootering Canyon Uranium Processing Facility and feels that the plans meet the requirements of the Utah Mined Land Reclamation Act. The Division seeks the Board's concurrence so that tentative approval may be issued for this on-site mill facility.

The Shootering Canyon Uranium Processing Facility is connected to three other projects of note in this area. Plateau Resources is the developer of the community of Ticaboo and the Lucky Strike/Tony M. and the Frank M. Mines. Both of the mines were presented at the Executive Board meeting.

The Division also seeks the Board's concurrence with the amount and form of the reclamation surety.

An Executive Summary for the mill is enclosed for your review and information.

MAW/te

Attachment: Executive Summary

EXECUTIVE SUMMARY  
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Plateau Resources Ltd.

Shooter Canyon  
Uranium Processing Facility  
ACT/017/016  
Garfield County, Utah

#### PROPOSED ACTION:

The proposed action is the construction and operation of a uranium processing facility. The product ( $U_3O_8$ ) production will be limited to  $2.2 \times 10^5$  kg per year.

The source of the operators legal right to conduct operations is mill site claims, lode claims and placer claims. The estimated duration of the operations is 20 years.

#### LOCATION:

The mill will be located in Sections 33 and 34 of Township 35 South, Range 11 East and Sections 3 and 4 of Township 36 South, Range 11 East. This location is 55 miles south of Hanksville and 15 miles north of Bullfrog Basin via State Route 276 in Shootering Canyon. A map is enclosed showing this location.

#### GEOLOGY AND SOILS:

The proposed mill site is located within the Henry Mountains Basin and is characterized by buttes, mesas and canyons. The buttes and mesas in this area are capped by the Salt Wash Member of the Morrison Formation. This sandstone unit contains the uranium deposits which are mined in the area. The site elevation is approximately 4,600 feet above sea level.

Soils in the area are generally low in organic matter and range in texture from sand to loamy-fine sand. Any topsoil encountered from development will be stockpiled.

#### HYDROLOGY:

Surface waters in the vicinity of the sites consist of Shootering and Hansen Creeks which are ephemeral streams. These streams have been categorized as Class C waters which means that without treatment these waters are suitable for irrigation, stock watering, recreation and the propagation and perpetuation of fish and wildlife. Baseline water quality sampling has been done by the U.S. Nuclear Regulatory Commission for the Environmental Statement for the mill. It is presumed that surface drainage at the site will not be affected.

Groundwater at the site is important for its potential source of water supply. The Entrada and Navajo sandstones contain the primary aquifers in the area and several springs exist in the vicinity.

### ECOLOGY:

Studies of the ecology of this area were conducted in 1977 for the Environmental Report for the proposed uranium processing facility. Vegetative plant cover varies between 15 and 25% and is dominated by blackbrush and Mormon tea.

Wildlife diversity of the area is comparatively low. The area has been ranked by Utah Division of Wildlife Resources as being of "Limited Value" to big game animals.

Due to a requirement by the U.S. Fish & Wildlife Service, a survey for endangered flora and fauna was conducted for the area of the proposed mill site in June, 1979. The findings of the survey were that none of the endangered or threatened plant species, which were suggested may be found in the area, were observed. Furthermore, essential habitat necessary to support any of the endangered or threatened species does not occur in the area. Additionally, no peregrine falcons or bald eagles or critical habitat for either species were found in the area.

### SOCIOECONOMIC:

The proposed mill site lies in a sparsely populated corner of Garfield County. Workers at an existing mine, Lucky Strike/Tony M. Mine, presently reside in a temporary 40-trailer camp within the Shootering Canyon. Trailers will begin moving to Ticaboo this August. Ten miles to the south of the proposed site in Kane County is the high-use recreation facility of Bullfrog Marina located on Lake Powell. A low number of permanent personnel reside year round at this site. School children at the mine camp presently utilize facilities at the Bullfrog Marina. The town of Ticaboo is scheduled for its first phase of completion in the spring of 1981. Complete facilities, including school and medical, are planned for the site.

### SITE FACILITIES:

Approximately 18 acres will be used for the ore processing facility. An office, parking, a gate house, storage areas, warehouses, maintenance buildings, a laboratory, ore storage areas, fine ore storage bins and a 70 acre tailings pond include the other major facilities at the site. A total of 350 acres will be occupied.

IMPACTS:

The following is a summary of environmental impacts and adverse effects.

1. Impacts to the area from the operation of the Shootering Canyon Uranium Project will include the following:
  - a. Alterations of up to 140 ha (350 acres) that will be occupied by the mill, mill facilities, borrow areas, tailings areas, and roads.
  - b. An increase in the existing background radiation levels of the mill area as a result of continuous but small releases of uranium, radium, radon, and other radioactive materials during construction and operation.
  - c. Socioeconomic effects on the local area, particularly the proposed community of Ticaboo, where the majority of workers will be housed during project construction and operation.
  - d. Production of solid waste material (tailings) from the mill at a rate of about 680 MT (750 tons) per day and deposition as a slurry in an onsite impoundment area.
2. Surface water will not be affected by normal milling operations. Mill process water will be taken from the Navajo aquifer, and process water will be discharged to the tailings impoundment at about  $0.68 \text{ m}^3$  (150 per gallon) per minute. Some  $6.9 \times 10^5 \text{ m}^3$  (560 acre-feet) of water per year will be utilized by the mill.
3. There will be no planned discharge of liquid or solid effluents from the mill and tailings site. The discharge of pollutants to the air will be small and the effects negligible. The dose commitments from normal operations of the proposed Shootering Canyon mill will represent only very small increases in doses from current background radiation sources.
4. Construction and operation of the Shootering Canyon mill will require the commitment of small amounts of chemicals and fossil fuels, relative to their abundance.

## EXECUTIVE SUMMARY

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5. Construction and operation of the Shootering Canyon mill will provide employment and induced economic benefits for the region but may also result in some socioeconomic stress.
6. The tailings disposal impoundment, occupying up to 28 ha (70 acres) when filled with tailings solids, may be unavailable for further productive use. However, when reclamation is completed and testing shows that radiation levels have been reduced to acceptable levels, it may be possible to return the tailings area to its former use as potential grazing land. After reclamation, the area topography will be similar to its present state.

A Draft Environmental Statement was made available to the public, to the Environmental Protection Agency, and to other agencies in February 1979.

#### MITIGATING MEASURES AND CONDITIONS:

1. Plateau Resources Ltd. will construct a tailings disposal facility that will incorporate features that will meet the safety criteria specified by the NRC.
2. Plateau Resources Ltd. will control release of airborne particulates from tailings by use of a water sprinkler system, chemical stabilization, covering with soil, or other equivalent means until reclamation of the tailings is completed.
3. Plateau Resources Ltd. will implement an environmental monitoring program described in the plan. The applicant shall establish a control program that shall include written procedures and instructions to control all environmental monitoring prescribed herein and shall provide for periodic management audits to determine the adequacy of implementation of these environmental controls. The applicant shall maintain sufficient records to furnish evidence of compliance with these environmental controls. In addition, the applicant shall conduct and document an annual survey of land use in the area surrounding the proposed project.
4. Before engaging in any activity not assessed by the NRC, Plateau Resources Ltd. will prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not assessed or that is greater than that assessed in the Environmental Statement, the applicant shall provide a written evaluation of such activities and obtain prior approval of the NRC and the Division of Oil, Gas and Mining.

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5. Plateau Resources Ltd. will notify the Office of the State Archaeologist if artifacts are discovered during construction of the mill or tailings disposal areas and shall have an archaeological survey performed prior to disturbing any previously unsurveyed areas.
6. If unexpected harmful effects or evidence of irreversible damage not otherwise identified in the Environmental Statement are detected during construction and operation, Plateau Resources Ltd. will provide to the NRC and the Division of Oil, Gas and Mining an acceptable analysis of the problem and a plan of action to eliminate or reduce the harmful effects or damage.
7. Plateau Resources will provide for stabilization and reclamation of the mill site and tailings disposal areas and mill decommissioning as described in the plan.
8. Plateau Resources Ltd. will provide surety arrangements to ensure completion of the mill site and tailings area stabilization, reclamation, and decommissioning plans.

SURETY:

Surety was estimated in detail by Plateau Resources Ltd. and approved by the Division Staff as to the amount.

Total Processing Facility Decommissioning Cost .....	\$1,120,500.00
Minus Salvage Value .....	\$ 875,000.00
Total Estimated Cost .....	\$ 245,000.00

APPLICATION HISTORY:

June 1977	NRC transferred Source Material License to Plateau Resources Ltd.
January 1979	Notice of Intent was submitted to the Division.
February 1979	NRC released a Draft Environmental Statement on the mill.
April & June 1979	Plateau Resources submitted addendums to the Notice.
June 1979	Division staff made a second field inspection of the site.



